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10 30
atgacgactgaaccggttatttttcaagcctgttttcaaagaaagaatt
M T T E P L F F K P V F K E R I

50 70 90
tggggcgggaccgcttttagctgattttggctataaccattccgtcacaa
W G G T A L A D F G Y T I P S Q

110 130
cgaacaggggagtgctgggcttttgccgcgcatcaaaatggtcaaagc
R T G E C W A F A A H Q N G Q S

150 170 190
gttgttcaaaacggaatgtataaggggttcacgctcagcgaattatgg
V V Q N G M Y K G F T L S E L W

210 230
gaacatcacagacattttattcggacagcttgaaggggaccggtttccct
E H H R H L F G Q L E G D R F P

250 270 2
ctgcttacaaaaatattagatgctgaccaggacttatctgttcaggtg
L L T K I L D A D Q D L S V Q V

90 310 330
catccgaatgatgaatatgccaacatacatgaaaacgggtgagcttgga
H P N D E Y A N I H E N G E L G

350 370
aaaacagaatgctggtacattattgattgccaaaaagatgccgagatt
K T E C W Y I I D C Q K D A E I

390 410 430
atztatggccacaatgcaacaacaaaggaagaactaactaccatgata
I Y G H N A T T K E E L T T M I

450 470
gagcgtggagaatgggatgagctcttgccgctgttaaaggtaaagccg
E R G E W D E L L R R V K V K P

490 510 5
ggggattttttctatgtgccaaagcgggtactgttcattgcatgga
G D F F Y V P S G T V H A I G K

30 550 570
ggaattcttgctttggagacgcagcagaactcagacacaacctacaga
G I L A L E T Q Q N S D T T Y R

FIG. 1A

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590 610
ttatatgattatgaccgaaaagatgcagaaggcaagctgcgcgagctt
L Y D Y D R K D A E G K L R E L

630 650 670
catctgaaaaagagcattgaagtgatagaggtcccgtctattccagaa
H L K K S I E V I E V P S I P E

690 710
cggcatacagttcaccatgaacaaattgaggatttgcttacaacgaca
R H T V H H E Q I E D L L T T T

730 750 7
ttgattgaatgcgcttacttttcgggtggggaaatggaacttatcagga
I I E C A Y F S V G K W N L S G

70 790 810
tcagcaagcttaaagcagcaaaaaccattccttcttatcagtgtgatt
S A S L K Q Q K P F L L I S V I

830 850
gaaggggagggccgtatgatctcttggtgagtatgtctatcctttcaaa
E G E G R M I S G E Y V Y P F K

870 890 910
aaaggagatcatatgttgctgccttacgggtcttggagaattttaaactc
K G D H M L L P Y G L G E F K L

930
gaaggatatgcagaatgtatcgtctcccatctg
E G Y A E C I V S H L

FIG. 1B

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```

papa_carpa.p 130 140 150 160 170 180
QE          VLNDGDVNIPEYVDWRQKGAVTPVKNQSGSCWAFSAVVTIEGIIKIRTGNLNEYSE
              ↓
              | ||||:| : :::: :| : ::
              | ||||:| : :::: :| : ::
:|
YJDE          PLFFKPVFKERIWGGTALADFGYTIPQSRTGECWAFAAHQNSVVQ--NGMYKGFLL
SE          ↑
              10 20 30 40 50 60
              190 200 210 220 230 240
papa_carpa.p LDCDRRSYGCNGG--YPWSALQLVAQYGIHYRNTYPYEGVQRYCRSREKGPYAAKTD
GV
              | : | : | : | : | : | : | : | : | : | : | : | : | : | : | :
YJDE          LWEHRRHLFGQLEGDRFP LLTKILDADQDLSVQ-VHPND---EYANIHENGELG-KTE
CW
              70 80 90 100 110
              250 260 270 280 290 ↓↓
papa_carpa.p RQVQPYNEGALLY---SIANQPVSVVLEAAGKDFQLYR-----GGIFVGPCGNKVDHA
VA
              :: :::: ::| : :::: ::| : | | | : | | | :
              YIIDCQKDAEIIYGHNATTKEELTTMIERGEWDELLRRVKVKPGDFFYVPSGT-----
              |
YJDE          120 130 140 150 160 170
VH          ↓↓
              300 310 320 330 340
papa_carpa.p AVGYGPNYILIKNSWGTGWGENGYIRIKRGTGNSYGVCGLYTSSFYFVKN
              | : | |
YJDE          AIGKGILALETQONSDDTTYRLDYDRKDAEGKLRELHLKKSIEVIEVPSIPERHTVHH
EQ
              180 190 200 210 220 230

```

FIG._2

[illegible]

FIG. 3A

```

180      ↓↓
      ↓↓
339  ALETQNSD TTYRLYDYDRKDAEGKLRHLKKSIEVVP S I P E R H T V H H E Q I E D L L
yjde.ppe
TT      :|||||:||||| :::|: |||: |::: ||: ||: |:::
PMI  VLETQNSD ATYRVYDYDRLD S N G S P R E L H F A K A V N A A T V P H V D G Y I D E S T E S R K G I T
IK      ↑↑
      190      200      210      220      230      2
40
240      T L I E C A Y F S V G K W N L S G S A S L K Q Q K P F L L I S V I E G E G R M I S G E Y V Y P F K K G D H M L L P Y
yjde.ppe
GL      |::: ||| |:::| | : |:: ||| | | : : |::|::|
:      T F V Q G E Y F S V Y K W D I N G E A E M A Q D E S F L I C S V I E G S G L L K Y E D K T C P L K K G D H F I L P A
PMI
QM      250      260      270      280      290      3
00
300      310
      G E F K L E G Y A E C I V S H L
yjde.ppe      :|::| |||:
PMI      P D F T I K G T C T L I V S H I
      310

```

FIG. 3B

[illegible]

FIG. 4A

[illegible]

FIG. 4B

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10 30
atgacgcattccattatTTTTtagagcctgtctTTTaaagaaagactatgg
M T H P L F L E P V F K E R L W

50 70 90
ggagggagcgaagcttcgtgacgctTTTggctaagcaataccctcacaa
G G T K L R D A F G Y A I P S Q

110 130
aaaacaggtgagtgcctggggccgtttctgcacatgcccatggctcgtcg
K T G E C W A V S A H A H G S S

150 170 190
tctgtaaaaaatggcccgctggcaggaaagacacttgatcaagtatgg
S V K N G P L A G K T L D Q V W

210 230
aaagatcatccagagatattcgggtttccggatggtaagggtgtttccg
K D H P E I F G F P D G K V F P

250 270 2
ctgctggtaaagctgctggacgccaatatggatctctccgtgcaagtc
L L V K L L D A N M D L S V Q V

90 310 330
catcctgatgatgattatgcaaaaactgcacgaaaatggcgaccttgggt
H P D D D Y A K L H E N G D L G

350 370
aaaacggagtgctgggtatatcattgattgcaaagatgacgccgaacta
K T E C W Y I I D C K D D A E L

390 410 430
attttgggacatcatgcaagcacaaaggaagagttcaaacaacgaata
I L G H H A S T K E E F K Q R I

450 470
gaaagcgggtgattggaacgggctgctgaggcgaatcaaaatcaagcca
E S G D W N G L L R R I K I K P

490 510 5
ggagatttcttttatgtgccaagcggtacactccatgcttttatgtaag
G D F F Y V P S G T L H A L C K

30 550 570
ggaacccttgctccttgaaatccagcaaaaactctgataacaacatatcgc
G T L V L E I Q Q N S D T T Y R

FIG._5A

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590 610
gtatacgattatgaccgctgtaatgaccagggccaaaaagaactctt
V Y D Y D R C N D Q G Q K R T L

630 650 670
catatagaaaaagccatggaagtcataacgataccgcatatcgataaa
H I E K A M E V I T I P H I D K

690 710
gtgcatacacccggaagtaaaagaagttggtaacgctgagatcattgtt
V H T P E V K E V G N A E I I V

730 750 7
tatgtgcaatcagattatctctcagtgtacaaatggaagattagcggc
Y V Q S D Y F S V Y K W K I S G

70 790 810
cgagctgcttttcccttcatatcaaacctatcttggctggggagtggtctg
R A A F P S Y Q T Y L L G S V L

830 850
agcggatcaggacgaatcataaataatgggtattcagtatgaatgcaat
S G S G R I I N N G I Q Y E C N

870 890 910
gcaggctcacactttattctgcctgcgcattttggagaatttacaata
A G S H F I L P A H F G E F T I

930
gaaggaacatgtgaattcatgatatctcctcct
E G T C E F M I S H P

FIG._5B

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10 30
atgacgcaatcacccgatttttctaacgcctgtgttttaaagaaaaaatc
M T Q S P I F L T P V F K E K I

50 70 90
tggggcggaaccgcttttacgagatagatttggatacagtattccttca
W G G T A L R D R F G Y S I P S

110 130
gaatcaacgggggaatgctggggccatttccgctcatccaaaaggaccg
E S T G E C W A I S A H P K G P

150 170 190
agcactgttgcaaattggcccggtataaaggaaagacattgatcgagctt
S T V A N G P Y K G K T L I E L

210 230
tggggaagagcacccgtgaagtattcggcgccgtagagggggatcggttt
W E E H R E V F G G V E G D R F

250 270 2
ccgcttctgacaaaagctgctggatgtgaaggaagatacgtcaattaaa
P L L T K L L D V K E D T S I K

90 310 330
gttcaccctgatgattactatgccggagaaaacgaagaggggagaactc
V H P D D Y Y A G E N E E G E L

350 370
ggcaagacggaatgctggtacattatcgactgtaaggaaaacgcagaa
G K T E C W Y I I D C K E N A E

390 410 430
atcatttacgggcatacggcccgtcaaaaaaccgaacttgtcacaatg
I I Y G H T A R S K T E L V T M

450 470
atcaacagcgggtgactgggagggcctgctgccaagaatcaaaaattaaa
I N S G D W E G L L R R I K I K

490 510 5
ccgggtgatttctattatgtgccgagcggaacgctgcacgcatttgtgc
P G D F Y Y V P S G T L H A L C

30 550 570
aagggggcccttggttttagagactcagcaaaattcagatgccacatac
K G A L V L E T Q Q N S D A T Y

FIG._6A

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590 610
cggggtgtacgattatgaccgtcttgatagcaacggaagtccgagagag
R V Y D Y D R L D S N G S P R E

630 650 670
cttcattttgccaaagcgggtcaatgccgccacgggttccccatgtggac
L H F A K A V N A A T V P H V D

690 710
gggtatatagatgaatcgacagaatcaagaaaaggaataaccattaaa
G Y I D E S T E S R K G I T I K

730 750 7
acatttgtccaagggggaatatatttttcgggtttataaatgggacatcaat
T F V Q G E Y F S V Y K W D I N

70 790 810
ggcgaagctgaaatggctcaggatgaatcctttctgatttgcagcgtg
G E A E M A Q D E S F L I C S V

830 850
atagaaggaagcgggtttgctcaagtatgaggacaaaacatgtccgctc
I E G S G L L K Y E D K T C P L

870 890 910
aaaaaagggtgatcactttatatttgccgggtcaaagtcccgattttacg
K K G D H F I L P A Q M P D F T

930
ataaaaaggaacttgtacccttatcgtgtctcatatt
I K G T C T L I V S H I

FIG._6B